CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

ORDER NO. 97-122

SITE CLEANUP REQUIREMENTS AND RESCISSION OF WASTE DISCHARGE REQUIREMENTS, ORDER NO. 86-031 FOR:

MICREL, INC.,
SIEMENS MICROELECTRONICS, INC.,
PASTORIA LIMITED PARTNERSHIP,

for the Site located at

639 NORTH PASTORIA AVENUE
SUNNYVALE
SANTA CLARA COUNTY

The California Regional Water Quality Control Board, San Francisco Bay Region (hereinafter the Board), finds that:

1. **Site Location and Surrounding Area**: The Site is located at 639 North Pastoria Avenue in Sunnyvale (Site) on flat to gently sloping terrain, along the southwestern side of the southern end of San Francisco Bay (see Site Map). The Site consists of a single-story building, paved parking surfaces and typical landscaping found at many other light industrial complexes. The area surrounding the Site is primarily developed with low rise industrial buildings common in the electronics industry of Santa Clara County. The majority of these buildings were constructed in the late 1960s and early 1970s. Mixed commercial and light industrial land uses are also common in the area immediately surrounding the Site.

   The Site is one of several VOC source areas located within the North Pastoria-Almanor Avenue Study Area (NP-AA Study Area), which is generally bounded by Vaqueros Avenue and Mary Avenue to the east and west and Del Rey Avenue and Almanor Avenue to the south and north. Moffett Field Naval Air Station is less than a mile to the north, Highway 101 lies approximately 2000 feet to the north.

2. **Site History**: Pastoria Limited Partnership (PLP) owns the Site. The property was developed in 1970 with the construction of a concrete tilt-up building and has been used for the manufacture of semiconductors since 1971. Litronix, Inc. conducted manufacturing operations at the Site from 1972 until 1977.

   Litronix, Inc., and its wholly owned subsidiary, Advanced LSI Tech, Inc., conducted manufacturing operations at the Site from 1972 until 1981. By 1978, Siemens Corporation had purchased the stock of Litronix, Inc. The assets of Litronix, Inc. are now held by Siemens Microelectronics, Inc. (SMI), formerly Siemens Components, Inc., a wholly owned subsidiary of Siemens Corporation. In 1981, Micrel, Inc. purchased the assets of the business from Advanced LSI Tech, Inc. and conducted manufacturing operations at the Site from 1981 until 1994.

A 500-gallon underground waste-solvent storage tank was installed at the Site by 1977 and was replaced in 1979. The replacement tank was removed in 1985. The tanks were found to be the source of subsurface pollution at the Site.

3. **Named Dischargers**: This Order distinguishes between primary dischargers, which include entities that either discharged pollutants to soil and groundwater and/or have successor liability for such discharges, and secondary dischargers, which include entities identified because of their ownership and control of property upon which discharges have occurred.

The Board finds Micrel, Inc., as a tenant and operator of the Site, and SMI as the successor in interest to Litronix, Inc., a tenant and operator of the Site, to be primary dischargers responsible for meeting the requirements of this Order.

The Board finds PLP as a secondary discharger because of its ownership and control of the property. PLP will be responsible for compliance only in the event that other named dischargers fail to comply with the requirements of this Order.

If additional information is submitted indicating that other parties caused or permitted any waste to be discharged on the Site where it entered or could have entered waters of the state, the Board will consider adding that party's name to this Order.

4 **Regulatory Status**: The Board adopted Order No. 86-031 for the Site on July 10, 1986 and identified Micrel, Inc., Litronix, Inc., and Pastoria Limited Partnership as dischargers responsible for remediation of soil and groundwater pollution at and emanating from the Site. This Order rescinds Order No. 86-031.

From 1987 to the present, the Dischargers have extracted and treated groundwater containing volatile organic compounds (VOCs). This Order requires Dischargers to continue implementing remedial measures approved by the RWQCB for groundwater at and immediately downgradient (near-site) of the Site. This Order also provides for the collection of additional information necessary to determine the nature and extent of DCE-affected groundwater directly downgradient of the Site. Based on findings of these remedial investigations, and as deemed appropriate, additional remedial measures may be implemented immediately downgradient of the Site.

5. **Site Hydrogeology**: The geologic and hydrogeologic data provided in this section have primarily been developed during investigations conducted under Order No. 86-031. The Site is underlain by unconsolidated sedimentary deposits of clay, silt, sand, and gravel. These deposits have been subdivided into several water-bearing zones. The shallowest water-bearing zone has been defined throughout the local area, whereas the intermediate and deeper water-bearing zones have been defined in the vicinity of 610 through 733 North Pastoria Avenue. These water-bearing zones are separated by saturated zones of relatively lower permeability (aquitards).

The shallow water-bearing zone has been designated the A zone and extends from approximately 7 to 30 feet below the ground surface. The intermediate water-bearing zone has been designated the B zone and extends from approximately 40 to 50 feet below ground surface. Deeper-water bearing zones have been identified below the B zone within the depth interval of 50 feet to 100 feet below ground surface. Discontinuous sand and gravel permeable intervals of varying thickness occur within these zones.

The groundwater gradient within the A zone is generally in a northeasterly direction. The potentiometric surface in this zone ranges from 7 to 15 feet below the ground surface in the

area. In the vicinity of 610 through 733 North Pastoria Avenue, the B zone groundwater gradient is in a general easterly direction.

There is a strong upward hydraulic gradient from the deeper water-bearing zones toward the shallower A and B zones.

6. **Previous Remedial Investigation**: Since 1986 SMI has investigated soil, soil-gas, and groundwater within the NP-AA Study Area in accordance with Order No. 86-031. This work has characterized soil and groundwater quality and identified other source areas. Groundwater quality at the Site has been characterized by installing and sampling onsite and offsite monitoring wells. As described in Finding 7, groundwater extraction and treatment has been an effective remedial technology to capture and remove VOCs from groundwater at and downgradient from the Site. Analyses of groundwater samples collected in May 1997 from onsite monitoring wells indicate the presence of trans/cis 1,2-dichloroethene (1,2-DCE) in A- and B-zone groundwater in concentrations as high as 1,400 ppb. Additional investigation will be conducted to evaluate the vertical and horizontal extent of elevated 1,2-DCE concentrations in A- and B-zone groundwater at and immediately downgradient from the Site (see Section B. Tasks 2 and 3 of this Order).

SMI has also conducted area-wide soil and groundwater quality investigations that resulted in the identification of two significant groundwater contaminant plumes within the NP-AA Study Area originating from source areas downgradient and crossgradient from the Site. SMI conducted an extensive soil and groundwater quality investigation at 645 and 675 Almanor Avenue and identified a significant source of chlorinated VOCs in soil that has impacted groundwater at and downgradient of 645 and and 675 Almanor Avenue. SMI also performed a groundwater quality investigation in the vicinity of North Mary Avenue and North Palomar Avenue and identified a plume of VOC-affected groundwater flowing into the NP-AA Study Area. These contaminant plumes are further discussed in Finding 8.

7. **Interim Remedial Measures**: Significant remedial measures have been implemented over the past ten years to remediate soil and groundwater with elevated VOC concentrations, and have reduced the potential migration of chemicals at the Site. In 1985 Micrel removed an underground spent solvent storage tank located at the Site, and approximately 50 cubic yards of soil containing VOCs (primarily ethylbenzene, xylenes, and TCE). In 1987 SMI also removed and disposed of approximately 100 cubic yards of VOC affected soil from the general area of the former waste storage yard. In January 1991 soil-gas extraction system was placed online to further remediate soils at the Site. The soil-gas extraction system was taken offline in May 1995 after concentrations had decreased to less than 1 mg/m3 and become asymptotic. In December of 1995, following the Micrel facility closure, approximately 200 additional cubic yards were excavated from the area of the former acid neutralization system piping and the southern sump. Analytical results of confirmation soil samples collected from all potential and identified source areas at the Site (including investigations within the building) indicated that the soil-gas and excavation remedial activities were effective.

In addition, between 1987 and 1989, a groundwater extraction and treatment system was installed in the NP-AASD by SMI to capture VOC-affected A- and B-zone groundwater. The A-zone extraction system consisted of four on- or near-site extraction wells and six off-site extraction wells (as far as 2,000 feet downgradient from 639 North Pastoria Avenue and 1,000 feet north of Almanor Avenue). The B-zone extraction system consists of one near-site well. In July 1995, SMI was authorized to discontinue all groundwater extraction and monitoring north of Almanor Avenue and only temporarily continue extraction from extraction wells immediately adjacent to and south of Almanor Avenue, based on the finding of significant VOC sources at 645 and 675 Almanor Avenue and west

of Palomar Avenue (upgradient of Almanor Avenue). With this modification to the extraction program, the A-zone groundwater extraction system now only temporarily includes three off-site extraction wells (LF-24A, LF-25A, and LF-26A).The new sources at 645 and 675 Almanor Avenue will be addressed in a separate order. The source(s) located west of Palomar is under investigation.

Since August 1987, the groundwater extraction and treatment system has treated just over 100 million gallons of water and extracted over 600 lbs of VOCs (1 lb VOCs per 167,000 gal. water). The groundwater extraction system will continue to extract on-site and near-site groundwater to reduce the threat to water quality, public health, and the environment posed by the discharge of waste. Based on the remedial investigation findings required by this Order, further remedial measures may may have to be undertaken immediately downgradient of the Site, as appropriate.

8. **Adjacent Sites**: Investigations have been conducted at 610 North Pastoria Avenue (610 site). Those investigations determined that VOCs were present in soil and groundwater beneath the 610 site. Under the oversight of Board staff, Intersil, Inc. (the responsible party) implemented remedial measures to contain and remediate affected soil and groundwater at the 610 site. Intersil and SMI informed the Board that SMI has agreed to assume responsibility for the investigation and/or remediation of chemicals of concern, if any, that have migrated downgradient from the 610 site. Therefore, Intersil, Inc. (former tenant) and Renault & Handley Employees Investment Company (property owner) are not named as dischargers in an order at this time. Should SMI not perform investigation and remediation to the satisfaction of the Board, the Board will name Intersil, Inc. and Renault & Handley Employees Investment Company as dischargers in an order.

In addition a plume of VOC-affected groundwater has been identified on the upgradient portion of the 610 site. The source of the VOCs is undetermined at this time.

Finally, another VOC groundwater plume has been discovered west of the Site (west of Palomar Avenue and east of Mary Avenue), which is crossgradient of the Site relative to the A-zone groundwater flow direction. Relatively high concentrations of VOCs have been discovered in the A- and B-water bearing zones. SMI conducted at their own expense a groundwater investigation to confirm the existence and general vicinity of this upgradient source. Board staff are using the data from the investigation to target specific properties west of Palomar for site and chemical use histories and groundwater investigations.

9. **Basis for Cleanup Standards**

a. **General**: State Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," applies to this discharge and requires attainment of background levels of water quality, or the highest level of water quality which is reasonable if background levels of water quality cannot be restored. Cleanup levels less than background must be consistent with the maximum benefit to the people of the State, not unreasonably affect present and anticipated beneficial uses of such water, and not result in exceedance of applicable water quality objectives.

State Board Resolution No. 92-49, "Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code Section 13304," applies to this discharge. This Order and its requirements are consistent with the provisions of Resolution No. 92-49, as amended.

b. **Beneficial Uses**: The Board adopted a revised Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) on June 21, 1995. This updated and consolidated plan represents the Board's master water quality control planning document. The revised Basin Plan was approved by the State Water Resources Control Board and the Office of Administrative Law on July 20, 1995, and November 13, 1995, respectively. A summary of regulatory provisions is contained in 23 CCR 3912. The Basin Plan defines beneficial uses and water quality objectives for waters of the State, including surface waters and groundwaters.

Board Resolution No. 89-39, "Sources of Drinking Water," defines potential sources of drinking water to include all groundwater in the region, with limited exceptions for areas of high TDS, low yield, or naturally-high contaminant levels. Groundwater underlying and adjacent to the Site qualifies as a potential source of drinking water.

The Basin Plan designates the following potential beneficial uses of groundwater underlying and adjacent to the Site:

o Municipal and domestic water supply
o Industrial process water supply
o Industrial service water supply
o Agricultural water supply
o Freshwater replenishment to surface waters

At present, there is no known use of groundwater underlying the Site for the above purposes

The existing and potential beneficial uses of the Sunnyvale West Channel include:

o Municipal and domestic supply
o Agricultural supply
o Industrial process supply or service supply
o Groundwater recharge
o Water contact and non-contact recreation
o Wildlife habitat
o Cold freshwater and warm freshwater habitat
o Fish migration and spawning
o Navigation
o Estuarine habitat
o Shellfish harvesting
o Preservation of rare and endangered species

c. **Basis for Groundwater Cleanup Standards**: The groundwater cleanup standards for the Site are based on applicable water quality objectives and are the more stringent of EPA and California primary maximum contaminant levels (MCLs). Cleanup to this level will result in acceptable residual risk to humans.

d. **Basis for Soil Cleanup Standards**: The soil cleanup standards for the Site are 1 mg/kg total VOCs and 10 mg/kg total SVOCs. Cleanup to this level is intended to prevent leaching of contaminants to groundwater and will result in acceptable residual risk to humans.

10. **Future Changes to Cleanup Standards**: The goal of this remedial action is to restore the beneficial uses of groundwater underlying and adjacent to the Site. Results from other sites suggest that full restoration of beneficial uses to groundwater as a result of active remediation at this Site may not be possible. If full restoration of beneficial uses is not technologically nor economically achievable within a reasonable period of time, then the discharger may request modification to the cleanup standards or establishment of containment zone, a limited groundwater pollution zone where water quality objectives are exceeded. Conversely, if new technical information indicates that cleanup standards can be surpassed, the Board may decide if further cleanup actions should be taken.

11. **Reuse or Disposal of Extracted Groundwater**: Board Resolution No. 88-160 allows discharges of extracted, treated groundwater from site cleanups to surface waters only if it has been demonstrated that neither reclamation nor discharge to the sanitary sewer is technically and economically feasible. SMI has evaluated the possibilities of reclaiming treated groundwater and discharging it to the sanitary sewer. Neither of these options appeared to be feasible or cost-effective, as discussed in SMI's "Notice of Intent for General Permit for VOC-Cleanup Discharges" dated November 23, 1994. The Board approved SMI's submittal and adopted Order No. 94-087 (NPDES Permit CAG 912003) for the Site on December 22, 1994. SMI will consider recycling treated groundwater in the future, if a viable re-use option is identified.

12. **Basis for 13304 Order**: The discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance.

13. **Cost Recovery**: Pursuant to California Water Code Section 13304, the discharger is hereby notified that the Board is entitled to, and may seek reimbursement for, all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order.

14. **CEQA**: This action is an Order to enforce the laws and regulations administered by the Board. As such, this action is categorically exempt from the provisions of the California Environmental Quality Act (CEQA) pursuant to Section 15321 of the Resources Agency Guidelines.

15. **Notification**: The Board has notified the discharger and all interested agencies and persons of its intent under California Water Code Section 13304 to prescribe site cleanup requirements for the discharge, and has provided them with an opportunity to submit their written comments.

16. **Public Hearing**: The Board, at a public meeting, heard and considered all comments pertaining to this discharge.

IT IS HEREBY ORDERED, pursuant to Section 13304 of the California Water Code, that the discharger (or its agents, successors, or assigns) shall cleanup and abate the effects described in the above findings as follows:

A. PROHIBITIONS

1. The discharge of wastes or hazardous substances in a manner which will degrade water quality or adversely affect beneficial uses of waters of the State is prohibited.

2. Further significant migration of wastes or hazardous substances through subsurface transport to waters of the State is prohibited.

3. Activities associated with the subsurface investigation and cleanup which will cause significant adverse migration of wastes or hazardous substances are prohibited.

B. TASKS

1. GROUNDWATER EXTRACTION AND TREATMENT SYSTEM

COMPLIANCE DATE: Ongoing unless otherwise notified by the Executive Officer

Dischargers shall continue to operate and maintain the groundwater treatment system installed at the Site. The existing groundwater extraction system consists of onsite/nearsite wells LF-6A, LF-7A, LF-10A, LF-44A, LF-45B and offsite wells LF-24A, LF-25A and LF-26A. This extraction system may be modified in accordance with Tasks 3 and 4 below.

2. WORKPLAN FOR ADDITIONAL 1,2-DCE INVESTIGATION

COMPLIANCE DATE: December 17, 1997

Submit a workplan, acceptable to the Executive Officer, for additional investigation to characterize 1,2-DCE concentrations in the downgradient vicinity of the Site including but not limited to 655 North Pastoria and 750 Palomar Avenue where 1,2-DCE has been detected in groundwater. The workplan should describe all significant implementation steps and should include an implementation schedule.

3. ADDITIONAL INVESTIGATION TECHNICAL REPORT

COMPLIANCE DATE: 90 days following Executive Officer approval of the Workplan identified in Task 2

Submit a technical report, acceptable to the Executive Officer, documenting the completion of additional investigation activities required in Task 2, above. The report shall include results of the additional investigation and shall include but not be limited to the evaluation of the need for additional extraction wells. This submittal shall include a workplan, acceptable to the Executive Officer, for modification of the remediation system, as necessary, to capture 1,2-DCE -affected groundwater immediately downgradient of the Site. This submittal may also include a proposal, with rationale, to remove wells LF-24A,

LF-25A, and LF-26A from the remediation system. The workplan shall describe all significant implementation steps and include an implementation schedule.

4. IMPLEMENTATION OF MODIFIED REMEDIATION SYSTEM

COMPLIANCE DATE: 180 days following Executive Officer approval of the Workplan identified in Task 2

Submit a technical report, acceptable to the Executive Officer, documenting completion of necessary tasks identified in the Task 3 workplan. If the modified system includes additional extraction wells, the report should document system start-up (as opposed to completion) and should present initial results on system effectiveness (e.g. capture zone or area of influence). Proposals for further system expansion or modification may be included in annual reports (see Self-Monitoring Program).

5. THREE-YEAR STATUS REPORT

COMPLIANCE DATE: Three years following Executive Officer approval of the Workplan identified in Task 4

Submit a technical report acceptable to the Executive Officer evaluating the effectiveness of the approved cleanup plan. The report should include:

a. Summary of effectiveness in controlling contaminant migration and protecting human health and the environment
b. Comparison of contaminant concentration trends with cleanup standards
c. Comparison of anticipated versus actual costs of cleanup activities
d. Performance data (e.g. groundwater volume extracted, chemical mass removed, mass removed per million gallons extracted)
e. Cost effectiveness data (e.g. cost per pound of contaminant removed)
f. Summary of additional investigations (including results) and significant modifications to remediation systems
g. Additional remedial actions proposed to meet cleanup standards (if applicable) including time schedule

If cleanup standards have not been met and are not projected to be met within a reasonable time, the report should assess the technical practicability of meeting cleanup standards and may propose an alternative cleanup strategy.

6. EVALUATION OF NEW HEALTH CRITERIA

COMPLIANCE DATE: 90 days after requested by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating the effect on the approved cleanup plan of revising one or more cleanup standards in response to revision of drinking water standards, maximum contaminant levels, or other health-based criteria.

7. **EVALUATION OF NEW TECHNICAL INFORMATION**

COMPLIANCE DATE: 90 days after requested by Executive Officer

Submit a technical report acceptable to the Executive Officer evaluating new technical information which bears on the approved cleanup plan and cleanup standards for this Site. In the case of a new cleanup technology, the report should evaluate the technology using the same criteria used in the feasibility study. Such technical reports shall not be requested unless the Executive Officer determines that the new information is reasonably likely to warrant a revision in the approved cleanup plan or cleanup standards.

8. **Delayed Compliance**: If the discharger is delayed, interrupted, or prevented from meeting one or more of the completion dates specified for the above tasks, the discharger shall promptly notify the Executive Officer and the Board may consider revision to this Order.

D. PROVISIONS

1. **No Nuisance**: The storage, handling, treatment, or disposal of polluted soil or groundwater shall not create a nuisance as defined in California Water Code Section 13050(m).

2. **Good O&M**: The discharger shall maintain in good working order and operate as efficiently as possible any facility or control system installed to achieve compliance with the requirements of this Order.

3. **Cost Recovery**: The discharger shall be liable, pursuant to California Water Code Section 13304, to the Board for all reasonable costs actually incurred by the Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Order. If the Site addressed by this Order is enrolled in a State Board-managed reimbursement program, reimbursement shall be made pursuant to this Order and according to the procedures established in that program. Any disputes raised by the discharger over reimbursement amounts or methods used in that program shall be consistent with the dispute resolution procedures for that program.

4. **Access to Site and Records**: In accordance with California Water Code Section 13267(c), the discharger shall permit the Board or its authorized representative:

   a. Entry upon premises in which any pollution source exists, or may potentially exist, or in which any required records are kept, which are relevant to this Order.

   b. Access to copy any records required to be kept under the requirements of this Order.

   c. Inspection of any monitoring or remediation facilities installed in response to this Order.

d. Sampling of any groundwater or soil which is accessible, or may become accessible, as part of any investigation or remedial action program undertaken by the discharger.

5. **Self-Monitoring Program**: The discharger shall comply with the Self-Monitoring Program as attached to this Order and as may be amended by the Executive Officer.

6. **Contractor Qualifications**: All hydrogeologic documents (plans, specifications, and reports) shall be signed by and stamped with the seal of a California registered geologist, a California certified engineering geologist, or a California registered civil engineer.

7. **Lab Qualifications**: All samples shall be analyzed by State-certified laboratories or laboratories accepted by the Board using approved EPA methods for the type of analysis to be performed. All laboratories shall maintain quality assurance/quality control (QA/QC) records for Board review. This provision does not apply to analyses that can only reasonably be performed on-site (e.g. temperature).

8. **Document Distribution**: Copies of all correspondence, technical reports, and other documents pertaining to compliance with this Order shall be provided by SMI to the following agencies:

   a. City of Sunnyvale
   b. County of Santa Clara
   c. Santa Clara Valley Water District

9. **Reporting of Changed Owner or Operator**: The discharger shall file a technical report on any changes in Site occupancy or ownership associated with the property described in this Order.

10. **Reporting of Hazardous Substance Release**: If any hazardous substance is discharged in or on any waters of the State, or discharged or deposited where it is, or probably will be, discharged in or on any waters of the State, the discharger shall report such discharge to the Regional Board by calling (510) 286-1255 during regular office hours (Monday through Friday, 8:00 to 5:00).

    A written report shall be filed with the Board within five working days. The report shall describe: the nature of the hazardous substance, estimated quantity involved, duration of incident, cause of release, estimated size of affected area, nature of effect, corrective actions taken or planned, schedule of corrective actions planned, and persons/agencies notified. This reporting is in addition to reporting to the Office of Emergency Services required pursuant to the Health and Safety Code.

11. **Secondarily-Responsible Discharger**: Within 60 days after being notified by the Executive Officer that other named dischargers have failed to comply with this Order, Pastoria Limited Partnership as property owner shall then be responsible for complying with this Order.

12. **Rescission of Existing Order**: This Order rescinds Order No. 86-031.

13. **Periodic SCR Review**: The Board will review this Order periodically and may revise it when necessary.

I, Loretta K. Barsamian, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on October 15, 1997.

Loretta K. Barsamian
Executive Officer

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FAILURE TO COMPLY WITH THE REQUIREMENTS OF THIS ORDER MAY SUBJECT YOU TO ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO: IMPOSITION OF ADMINISTRATIVE CIVIL LIABILITY UNDER WATER CODE SECTIONS 13267 OR 13350, OR REFERRAL TO THE ATTORNEY GENERAL FOR INJUNCTIVE RELIEF OR CIVIL OR CRIMINAL LIABILITY

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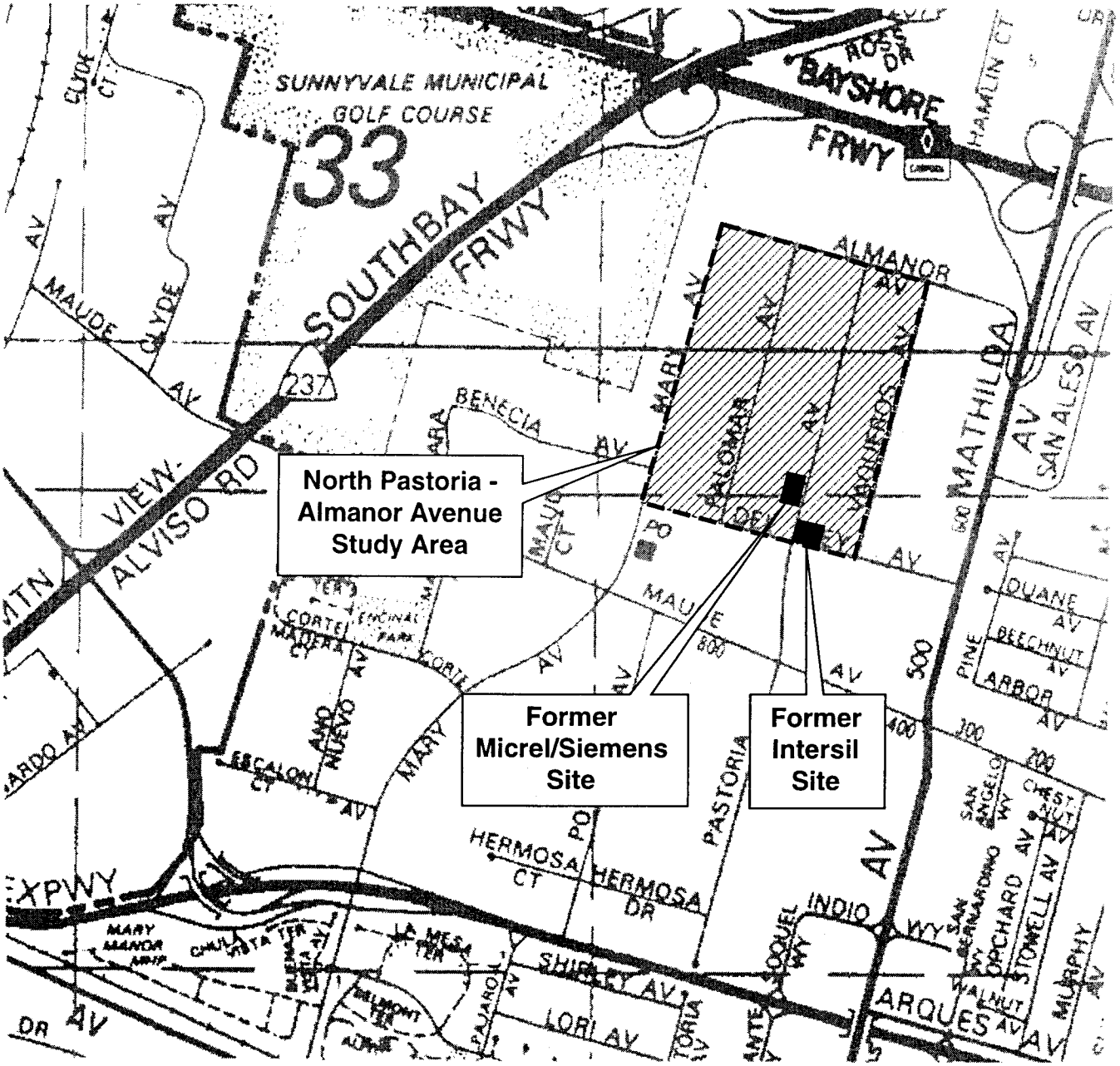
Attachments: Site Map
Self-Monitoring Program



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Site Vicinity Map

Levine·Fricke·Recon

Figure 1

Project No. 1215

1215SV01.CDR 042597

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM FOR:

MICREL, INC.,
SIEMENS MICROELECTRONICS, INC.,
PASTORIA LIMITED PARTNERSHIP,

for the Site located at

639 NORTH PASTORIA AVENUE
SUNNYVALE
SANTA CLARA COUNTY

1. **Authority and Purpose**: The Board requests the technical reports required in this Self-Monitoring Program (SMP) pursuant to Water Code Sections 13267 and 13304. This SMP is intended to document compliance with Board Order No. 97-122 (site cleanup requirements).

2. **Monitoring**: The discharger shall measure groundwater elevations quarterly in all monitoring wells, and shall collect and analyze representative samples of groundwater according to the following schedule:

Well #	Frequency	Analyses	Well #	Frequency	Analyses
LF-6A	SA	8010	LF-11A	A	8010
LF-7A	SA	8010	LF-13A	A	8240
LF-10A	SA	8010	LF-15A	A	8010
LF-24A	A	8010	LF-17A	A	8010
LF-25A	A	8010	LF-18A	A	8010
LF-26A	A	8010	LF2	A	8010
LF-44A	SA	8010	LF-30B	A	8010
LF-45B	SA	8010	LF-31B	A	8010
LF-8A	A	8010	LF-46B	A	8010

Key:
SA = Semi-Annually
A = Annually

8010 = EPA Method 8010 or equivalent

8240 = EPA Method 8240 or equivalent

The discharger may propose changes in the above table; any proposed changes are subject to Executive Officer approval. A sampling schedule has been created for the area for which the Site exists, please follow the date specific sampling schedule as attached.

New Monitoring or Extraction Wells- Initially the discharger shall sample any new monitoring or extraction wells on a quarterly basis and shall analyze groundwater samples using EPA Method 8240. After a two year period, the discharger may sample new wells on a semi-annual or annual sampling schedule, subject to Executive Officer approval.

3. **Monitoring Reports**: The discharger shall submit a letter report containing semiannual data no later than 45 days following the end of the sampling period (i.e. the first semi-annual data letter report is due August 15, 1998). The Annual report shall be submitted no

later than 45 days following the end of the annual sampling period (i.e. the first annual report is due February 15, 1999. The Annual reports shall include:

a. **Transmittal Letter**: The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

b. **Groundwater Elevations**: Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map should be prepared for each monitored water-bearing zone. Historical groundwater elevations shall be included in the annual report each year.

c. **Groundwater Analyses**: Groundwater sampling data shall be presented in tabular form, and an isoconcentration map should be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used, detection limits obtained for each reported constituent, and a summary of QA/QC data. Historical groundwater sampling results shall be included in the annual report each year. The report shall describe any significant increases in contaminant concentrations since the last report, and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).

d. **Groundwater Extraction**: If applicable, the annual report shall include groundwater extraction results in tabular form, for each extraction well and for the site as a whole, expressed in gallons per minute and total groundwater volume for the annual period. The report shall also include contaminant removal results, from groundwater extraction wells expressed in units of chemical mass per day and mass for the annual period. Historical mass removal results shall be included in the annual report each year.

e. **Status Report**: The semi-annual letter report and the annual report shall describe relevant work completed during the reporting period (e.g. site investigation, interim remedial measures) and work planned for the following semi-annual period.

4. **Violation Reports**: If the discharger violates requirements in the Site Cleanup Requirements, then the discharger shall notify the Board office by telephone as soon as practicable once the discharger has knowledge of the violation. Board staff may, depending on violation severity, require the discharger to submit a separate technical report on the violation within five working days of telephone notification.

5. **Other Reports**: The discharger shall notify the Board in writing prior to any site activities, such as construction or underground tank removal, which have the potential to cause further migration of contaminants or which would provide new opportunities for site investigation.

6. **Record Keeping**: The discharger or his/her agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and shall make them available to the Board upon request.

7. **SMP Revisions**: Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the discharger. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

I, Loretta K. Barsamian, Executive Officer, hereby certify that this Self-Monitoring Program was adopted by the Board on October 15, 1997.

Loretta K. Barsamian
Executive Officer

Attachment:
Date Specific Sampling Schedule

Date Specific Sampling Schedule
Calendar Year 1998

Quarterly Events

Groundwater Elevations

Groundwater elevations shall occur during the first 3 days of the first full week of the first month of each calendar quarter (January, April, July and October). For the year 1998 this would occur during the periods of:

January 5 - 7
April 6 - 8
July 6 - 8
October 5 - 7

Groundwater Sampling

Groundwater sampling shall occur during the first 2 full weeks of the first month of each calendar quarter (January, April, July and October). For the year 1998 this would occur during the periods of:

January 5 - 16
April 6 - 17
July 6 - 17
October 5 - 16

Semiannual Events

Groundwater Elevations

Groundwater elevations shall occur during the first 3 days of the first full week of the first month of the second and fourth calendar quarters (April and October). For the year 1998 the dates would be consistent with the quarterly dates shown above.

Groundwater Sampling

Groundwater sampling shall occur during the first 2 full weeks of the first month of the second and fourth calendar quarters (April and October). For the year 1998 this would occur during the periods of the dates would be consistent with the quarterly dates shown above.

Annual Events shall occur during the month of April, the dates would be consistent with the quarterly dates shown above.

Following 1998 the date specific sampling schedule shall follow the same format as that found for Calendar Year 1998.